

CLAIMS

1. A communication system, comprising a first access
router belonging to a first subnet, and a second access
5 router belonging to a second subnet different from said
first subnet, said first access router and said second
access router being connected via IP network, and a
mobile terminal is connected to said first subnet or
said second subnet via radio communication, wherein:
10 the mobile terminal connected to said first subnet
requests a link local address of said second access
router in said second subnet to said second access
router immediately after executing handover to said
second subnet and acquires said link local address of
15 said second access router from said second access router.

2. A communication system, comprising a first access
router belonging to a first subnet, and a second access
router belonging to a second subnet different from said
20 first subnet, said first access router and said second
access router being connected via IP network, and a
mobile terminal is connected to said first subnet or
said second subnet via radio communication, wherein:
the mobile terminal connected to said first subnet
25 requests a link local address of a default router in

said second subnet to said second access router immediately after executing handover to said second subnet and acquires said link local address of said default router from said second access router.

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3. The communication system according to claim 1 or 2, wherein said mobile terminal is so arranged that it refers to said link local address when transmitting packet to outside of said second subnet after acquiring
10 said link local address from said second access router.

4. The communication system according to claim 1 or 2, wherein said mobile terminal is so arranged that it requests said link local address to said second access
15 router when transmitting a message V to notify connection to said second subnet.

5. The communication system according to claim 4, wherein said mobile terminal is so arranged that
20 information to request said link local address is added within said message V, and said second access router is so arranged that an RA message including said link local address is transmitted to said mobile terminal.

25 6. The communication system according to claim 4,

wherein said mobile terminal is so arranged that information to request said link local address different from said message V is transmitted to said second access router, and said second access router is so arranged
5 that an RA message including said link local address is transmitted to said mobile terminal.

7. The communication system according to claim 1 or 2, wherein said second access router is so arranged that an
10 RA message including said link local address is transmitted to said mobile terminal when a message V to notify the connection to said second subnet is received from said mobile terminal.

15 8. A communication system, comprising a first access router belonging to a first subnet, and a second access router belonging to a second subnet different from said first subnet, said first access router and said second access router being connected via IP network, and a
20 mobile terminal is connected to said first subnet or said second subnet via radio communication, wherein:

the mobile terminal connected to said first subnet requests a link local address to an arbitrary router belonging to said second subnet immediately after
25 executing handover to said second subnet, and acquires

said link local address from said arbitrary router and identifies a default router in said second subnet.

9. The communication system according to claim 8,

5 wherein said mobile terminal is so that it refers to a link local address of a default router when packet is transmitted to outside of said second subnet after said default router has been identified.

10 10. The communication system according to claim 8 or 9, wherein said mobile terminal is so arranged that it requests said link local address to said arbitrary router when transmitting a message V to notify connection to said second subnet.

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11. The communication system according to claim 10, wherein said mobile terminal multi-casts at least one of said message V or said message V added with information to instruct a request of said link local address or
20 information to request said link local address different from said message V in said second subnet, and said default router in said second subnet transmits an RA message to said mobile terminal when receiving the information transmitted by said multi-casting.

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12. A mobile terminal in a communication system,
comprising a first access router belonging to a first
subnet, and a second access router belonging to a second
subnet different from said first subnet, said first
5 access router and said second access router being
connected via IP network, and a mobile terminal is
connected to said first subnet or said second subnet via
radio communication, wherein said mobile terminal
comprises:

10 means for requesting a link local address of said
second access router in said second subnet to said
second access router immediately after executing
handover from said first subnet to said second subnet;
and

15 means for receiving said link local address of said
second access router from said second access router.

13. A mobile terminal in a communication system,
comprising a first access router belonging to a first
20 subnet, and a second access router belonging to a second
subnet different from said first subnet, said first
access router and said second access router being
connected via IP network, and a mobile terminal is
connected to said first subnet or said second subnet via
25 radio communication, wherein said mobile terminal

comprises:

means for requesting a link local address of a default router in said second subnet to said second access router immediately after executing handover from
5 said first subnet to said second subnet; and

means for receiving said link local address of said default router from said second access router.

14. The mobile terminal according to claim 12 or 13,
10 wherein there is provided means to refer to said link local address when packet is transmitted to outside of said second subnet after said link local address has been acquired from said second access router.

15 15. The mobile terminal according to claim 12 or 13, wherein there is provided means to request said link local address to said second access router when transmitting a message V to notify connection to said second subnet.

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16. The mobile terminal according to claim 15, wherein there are provided:

means for adding information to instruct a request of said link local address in said message V;

25 means for receiving an RA message including said

link local address from said second access router; and
means for extracting said link local address from
said RA message.

- 5 17. The mobile terminal according to claim 15, wherein
there are provided:

means for generating information to request said
link local address different from said message V and for
transmitting it to said second access router;

- 10 means for receiving an RA message including said
link local address from said second access router; and
means for extracting said link local address from
said RA message.

- 15 18. The mobile terminal according to claim 12 or 13,
wherein there are provided:

means for receiving an RA message including said
link local address from said second access router as a
response after transmitting a message V to notify

- 20 connection to said second subnet; and

means for extracting said link local address from
said RA message.

19. A mobile terminal in a communication system,
25 comprising a first access router belonging to a first

subnet, and a second access router belonging to a second subnet different from said first subnet, said first access router and said second access router being connected via IP network, and a mobile terminal is
5 connected to said first subnet or said second subnet via radio communication, wherein there are provided:

means for requesting a link local address to an arbitrary router belonging to said second subnet immediately after executing handover from said first
10 subnet to said second subnet; and

means for receiving said link local address from said arbitrary router and for identifying a default router in said second subnet from said arbitrary router.

15 20. The mobile terminal according to claim 19, wherein there is provided means for referring to a link local address of said default router when packet is transmitted to outside of said second subnet after said default router has been identified.

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21. The mobile terminal according to claim 19 or 20, wherein there is provided means for requesting said link local address to said arbitrary router when transmitting a message V to notify connection to said second subnet.

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22. The mobile terminal according to claim 21, wherein there are provided:

means for multi-casting at least one of said message V or said message V added with information to request
5 said link local address or information to request said link local address different from said message V in said second subnet; and

means for receiving an RA message transmitted by said default router in said second subnet as a response
10 to said multi-casting.

23. An access router, being a second access router belonging to a second subnet different from a first subnet, to which a first access router belongs, said
15 access router being connected to said first access router via IP network and can be connected to a mobile terminal via radio communication, wherein said access router comprises:

means for receiving a request of a link local
20 address of said second access router from said mobile terminal immediately after executing handover to said second subnet from said first subnet;

means for acquiring said link local address of said second access router; and

25 means for providing said link local address of said

second access router to said mobile terminal.

24. An access router, being a second access router belonging to a second subnet different from a first subnet, to which a first access router belongs, said access router being connected to said first access router via IP network and can be connected to a mobile terminal via radio communication, wherein said access router comprises:

10 means for receiving a request of a link local address of a default router in said second subnet from said mobile terminal immediately after executing handover from said first subnet to said second subnet;

 means for acquiring said link local address of said
15 second access router; and

 means for providing said link local address of said default router to said mobile terminal.

25. The access router according to claim 23 or 24,
20 wherein there is provided means for receiving a request of said link local address from said mobile terminal when receiving a message V to notify connection to said second subnet from said mobile terminal.

25 26. The access router according to claim 25, wherein

there are provided:

means for receiving information to request said link local address added in said message V as a request of said link local address from said mobile terminal; and

5 means for transmitting said RA message to said mobile terminal when said message V added with information to request said link local address is received from said mobile terminal.

10 27. The access router according to claim 25, wherein there are provided:

means for receiving information to request said link local address different from said message V as a request of said link local address from said mobile terminal;

15 and

means for transmitting said RA message to said mobile terminal when information to request said link local address is received from said mobile terminal.

20 28. The access router according to claim 24 or 25, wherein there is provided means for transmitting an RA message to said mobile terminal when a message V to notify connection to second subnet is received from said mobile terminal.

ABSTRACT

A new technique is disclosed, by which a mobile terminal executing handover between subnets can quickly transmit packet to outside immediately after the handover. According to this technique, MN (mobile node) executing the handover requests an external transmission address relating to a subnet connected after the handover (a link local address of an access router or of a default router belonging to the subnet after the handover) when transmitting an FNA message to NAR31 connected immediately after the handover. In response to the request, NAR acquires the external transmission address and transmits the external transmission address to MN by sending an RA message to MN. MN sets up the external transmission address acquired before the handover to the packet to be transmitted after the handover.